

CLAIMS

What is claimed is:

1. A method of manufacturing a musical instrument comprising:

5 forming a plurality of layers of wood into a stack, with a grain orientation of adjacent layers differing, the grain orientations defining a crossing angle, the crossing angle between adjacent layers less than 90°; and

10 molding the stack with a resin in a mold to form a lamination comprising at least a portion of the musical instrument.

15 2. The method of claim 1, further comprising cutting the plurality of layers into a shape of at least a portion of the musical instrument prior to forming the plurality of layers into the stack.

20 3. The method of claim 1, wherein the portion of the musical instrument comprises a body of the musical instrument.

4. The method of claim 1, wherein the portion of the musical instrument comprises a neck of the musical instrument.

25 5. The method of claim 1, wherein in the molding step, further comprising molding the stack in a closed mold having a cavity therein.

30 6. The method of claim 5, wherein the cavity in the closed mold has a shape corresponding to the portion of the musical instrument, and further comprising cutting the plurality of layers into the shape of the portion of the musical instrument prior to forming the plurality of layers into the stack.

7. The method of claim 6, wherein in the molding step, further comprising placing a core within the cavity to maintain an opening in the lamination, and further cutting a shape corresponding to a shape of the core into at least some of the layers.

5

8. The method of claim 6, wherein the portion of the musical instrument comprises a body of the musical instrument.

9. The method of claim 6, wherein in the molding step, further comprising placing a core within the cavity to maintain an opening in the lamination, and further cutting a shape corresponding to a shape of the core into at least some of the layers, the opening in the lamination comprising a recess to receive a neck of the musical instrument.

10

10. The method of claim 6, wherein in the molding step, further comprising placing a core within the cavity to maintain an opening in the lamination, and further cutting a shape corresponding to a shape of the core into at least some of the layers, the opening in the lamination comprising a recess to receive electronic components of the musical instrument.

20

11. The method of claim 6, wherein the portion of the musical instrument comprises a neck of the musical instrument.

25

12. The method of claim 6, wherein the mold cavity is shaped to deform a portion of the stack and further comprising loading the stack into the mold tightly to be deformed by the mold cavity.

30 13. The method of claim 12, wherein the mold cavity includes rounded corners shape to deform edges of the stack to impart a rounded edge to the musical instrument.

14. The method of claim 1, in the molding step, further comprising molding the stack between platens.

15. The method of claim 14, further comprising imparting a curve
5 to the stack by using curved platens.

16. The method of claim 15, further comprising imparting an S-shaped curve to the stack.

10 17. The method of claim 14, further comprising machining the lamination to a shape corresponding to the portion of the musical instrument.

18. The method of claim 14, wherein the portion of the musical
15 instrument comprises a body of the musical instrument.

19. The method of claim 14, wherein the portion of the musical instrument comprises a neck of the musical instrument.

20 20. The method of claim 1, further comprising wetting the plurality of layers with a resin prior to the molding step.

21. The method of claim 1, further comprising infusing resin into the stack during the molding step.

25 22. The method of claim 1, wherein the crossing angle is between 5° and 45°.

23. The method of claim 1, wherein the crossing angle is between
30 10° and 15°.

24. The method of claim 1, wherein the wood layers comprise a vertical grain softwood.

25. The method of claim 1, wherein at least a portion of the wood layers are tapered.

5 26. The method of claim 1, wherein the resin comprises an epoxy resin.

27. The method of claim 1, further comprising treating a surface of the lamination to form a finished surface.

10 28. An electric guitar formed by the method of claim 1.

29. A bass guitar formed by the method of claim 1.

15 30. A method of manufacturing a musical instrument comprising:
providing a stack of wood layers;
molding the stack of wood layers between curved platens to impart an S-shaped bend to a portion of the stack with wood fibers maintained continuous along the S-shaped bend and to form a
20 lamination comprising a neck of the musical instrument; and
attaching the neck to a body of the musical instrument.

31. The method of claim 30, further comprising cutting the neck from the lamination after molding.

25 32. The method of claim 30, further comprising cutting the neck from the stack of wood layers prior to molding.

30 33. The method of claim 30, further comprising forming a recess at a top of the body and inserting the neck into the recess in the body.

34. The method of claim 30, further comprising cutting the wood layers with a grain orientation of layers differing, and stacking the wood layers with the grain orientation of adjacent layers defining a crossing angle less than 90°.

5
35. A method of manufacturing a musical instrument comprising:
cutting a plurality of wood layers into a shape of a body of a musical instrument;

10
stacking the wood layers into a stack;
molding the stack of wood layers in a mold cavity having rounded internal corners, the stack of wood layers loaded in the cavity tightly to be deformed along edges by the mold cavity, whereby rounded edges are formed on the stack of wood layers, to form a lamination comprising a body of the musical instrument; and
15
attaching a neck to the body of the musical instrument.

36. The method of claim 35, further comprising forming a recess in the stack of wood layers with a core placed in the mold cavity.

20
37. The method of claim 35, further comprising cutting the wood layers with a grain orientation of layers differing, and stacking the wood layers with the grain orientation of adjacent layers defining a crossing angle less than 90°.

25
38. An electric stringed musical instrument comprising:
a body, the body including a recess formed in a top edge;
a neck comprising a laminated stack of wood layers, an S-shaped bend formed in the wood layers, a lower extent of the neck forming a tongue received in the recess in the body, the neck further comprising a head and an upper surface on the stack of wood layers extending from the head to a tongue and overlying the S-shaped bend.
30

39. The electric stringed musical instrument of claim 38,
wherein the instrument comprises an electric guitar.

40. The electric stringed musical instrument of claim 38,
5 wherein the instrument comprises a bass guitar.

41. An electric stringed musical instrument comprising:
a body comprising a laminated stack of wood layers, adjacent
layers having differing grain orientations, the grain orientations
10 defining a crossing angle, the crossing angle less than 90°; and
a neck attached to the body.

42. The electric stringed musical instrument of claim 41,
wherein the crossing angle is between 5° and 45°.

15 43. The electric stringed musical instrument of claim 41,
wherein the crossing angle is between 10° and 15°.

44. The electric stringed musical instrument of claim 41,
20 wherein the instrument comprises an electric guitar.

45. The electric stringed musical instrument of claim 41,
wherein the instrument comprises a bass guitar.

25 46. An electric stringed musical instrument comprising:
a body; and
a neck attached to the body, the neck comprising a laminated
stack of wood layers, adjacent layers having differing grain
orientations, the grain orientations defining a crossing angle
30 less than 90°.

47. The electric stringed musical instrument of claim 46, wherein the crossing angle is between 5° and 45°.

48. The electric stringed musical instrument of claim 46,
5 wherein the crossing angle is between 10° and 15°.

49. The electric stringed musical instrument of claim 46, wherein the instrument comprises an electric guitar.

10 50. The electric stringed musical instrument of claim 46, wherein the instrument comprises a bass guitar.

51. An electric stringed musical instrument comprising:
a body comprising a laminated stack of wood layers, adjacent
15 layers having differing grain orientations, the grain orientations
defining a crossing angle, the crossing angle less than 90°; and
a neck attached to the body, the neck comprising a laminated
stack of wood layers, adjacent layers having differing grain
orientations, the grain orientations defining a crossing angle
20 less than 90°.

52. The electric stringed musical instrument of claim 51 wherein
the crossing angles are between 5° and 45°.

25 53. The electric stringed musical instrument of claim 51,
wherein the crossing angles are between 10° and 15°.

54. The electric stringed musical instrument of claim 51,
wherein the instrument comprises an electric guitar.

30 55. The electric stringed musical instrument of claim 51,
wherein the instrument comprises a bass guitar.

56. An electric guitar formed by the method of claim 30.

57. A bass guitar formed by the method of claim 30.

5

58. An electric guitar formed by the method of claim 35.

59. A bass guitar formed by the method of claim 35.

10 60. The method of claim 1, wherein the portion of the musical instrument comprises a body and a neck of the musical instrument.